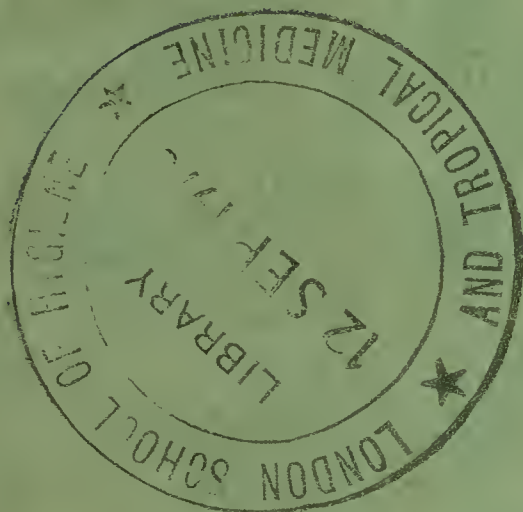


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STATE OF KELANTAN

ANNUAL REPORT OF THE MEDICAL DEPARTMENT FOR THE YEAR 1939.



By

W. GLYN EVANS,

Chief Medical Officer, Kelantan.

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Map of Kelantan on which Hospitals, Dispensaries, halting places of various travelling units, are indicated.



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STATE OF KELANTAN.

ANNUAL REPORT OF THE MEDICAL DEPARTMENT FOR THE YEAR 1939.

I. — INTRODUCTION.

1. Kelantan is a State on the East Coast of the Malay Peninsula, bounded on the North by the China Sea, on the East by the Sea and Trengganu, on the South by Pahang and on the West by Perak and Thailand (Siam). It has a coast line of about 60 miles, a total area of about 5,720 square miles which is just less than that of Yorkshire, and an estimated population on December 31st 1939 of 393,983.

2. There are hospitals or out-door dispensaries at important centres, other parts being visited regularly by travelling dispensary units, either by motor van by road, by motor launch by river, or by pack on jungle paths, so only the most remote and inaccessible parts of the interior are denied the advantages of at least some contact with Western medicine.

3. Figures for disease incidence were obtained from hospital and dispensary records and are fairly accurate but of course are not of the same standard as can be obtained for instance in the United Kingdom or even in the more developed parts of Malaya such as the Straits Settlements. Lists of the causes of death are grossly inaccurate since less than 3% of deaths were certified by medical practitioners.

4. There were no major outbreaks of infectious disease during the year under review and the general health of the population remained good. The crude death rate shows a slight increase from the previous year, being 18.73 compared with 17.22 but such a variation in a comparatively small population cannot be of much significance. The figure still compares favourably with that from other parts of Malaya. The birth rate fell from 32.76 to 30.71.

II. — NEW BUILDINGS.

5. A new Infectious Diseases Ward was opened at Kota Bharu, and seven quarters for hospital staff and a garage for a motor dispensary were completed during the year.

III. — LEGISLATION.

6. The Quarantine and Prevention of Diseases Enactment (No. 5 of 1939) and the rules made thereunder came into force on 1st April. Other legislation affecting public health was as follows:—

The Mining Enactment No. 10/1939, Notification No. 55/1939

The Opium and Chandu Rules (Amendment) Notification No. 106/39

The Opium and Chandu (Amendment) Enactment No. 37/39
Not. No. 106/39.

IV. — ADMINISTRATION.

7. The administration of the Medical and Health Department of the State is in the hands of an officer of the Colonial Medical Service seconded from the Straits Settlements or Federated Malay States for that purpose. Dr. H. J. Lawson acted as Chief Medical Officer until December 14th when the office was taken by Dr. W. Glyn Evans. Details of the Establishment are given in appendix I.

V. — FINANCIAL.

8. Expenditure, including Special Services, for the year was \$217,724.83 which was 6.73% of the total expenditure of the State.

9. Revenue, derived from hospital fees, sales of medicines and so on was \$10,392.78, made up as follows:—

Kota Bharu	..	..	..	..	\$ 8,244.27
Kuala Krai	..	..	..	..	1,621.56
Tumpat	..	..	..	..	521.85
Pasir Mas	..	..	..	..	5.10
Total					<hr/> \$10,392.78 <hr/>

Details are given in appendices II and III.

VI. — VITAL STATISTICS.

10. Registration of births and deaths was made compulsory in 1930 and it is assumed now that notifications are fairly complete but there must be a proportion of the population in the hinterland especially the aboriginals who are still backward in this respect.

11. The Infantile Mortality Rate shows a slight improvement over that of 1938 being this year 111.08. The number of deaths below the age of one year was 1344 and births were 12,099. The following table shows the rate for the past five years; the consistent improvement makes a pretty picture but it must not be supposed to be an accurate reflection of reality in view of the smallness of the total numbers concerned and the inevitable inaccuracies of available records:—

1935	..	..	..	..	132.43 per mille
1936	..	..	..	..	130.07 „ „
1937	..	..	..	..	112.94 „ „
1938	..	..	..	..	111.34 „ „
1939	..	..	..	..	111.08 „ „

These figures compare very creditably with those from other parts of Malaya.

12. The estimated population on December 31st, 1939 was 393,983, a decrease of 5,316 from the previous year. The estimation is made from the 1931 census by adding excess of births over deaths which for 1939 was 4,719 and subtracting excess of emigrations over immigrations. Details are given in the appropriate appendices.

There is some evidence to support the view that the consistent decrease in the population figure year by year is fallacious owing to the method of determination. The next census will show.

13. Births totalled 12,099 comprising 6,267 males and 5,832 females, a ratio of 1,075 to 1,000. Birth rates for the past five years are given below:—

1935	..	..	..	..	28.21 per mille
1936	..	..	..	..	29.44 „ „
1937	..	..	..	..	27.00 „ „
1938	..	..	..	..	32.76 „ „
1939	..	..	..	..	30.71 „ „

14. A word of warning must be issued regarding the tables in the appendices which show causes of death and deaths by age groups. Both are grossly inaccurate and are only a rough guide to the existing state of affairs. Totals can be accepted however as fairly true, the total deaths in 1939 being 7,380 comprising 3,871 males and 3,509 females and the crude death rate 18.74 per mille compared with 17.22 the previous year.

15. Table showing sick and invaliding and death rates of European and non-European officials 1939:—

			<i>European</i>	<i>Non-Europ.</i>
Total Number of official resident	..	..	24	1,131
Average number resident	..	..	24	1,131
Total number on sick list	..	..	6	110
Total number of days on sick list	..	..	214	1,620
Percentage of sick to average number resident	..		25	9.73
Average number of days on sick list for each patient			35.67	14.73
Average sick time to each resident	..	..	8.92	1.43
Total number invalided	..	..	—	6
Percentage of invaliding to total resident	..		—	.53
Total deaths	..	..	—	8
Percentage of deaths to total residents	..	..	—	.71
Percentage of deaths to total average resident	..		—	.71

VII. — INFECTIOUS DISEASES.

16. *Malaria* is endemic in the State being worse at the foot of the hills in Ulu Kelantan which is a rubber-planting area. No exact figures for comparison exist but a general impression is that some coastal areas are practically free from the disease while some hill villages are badly affected.

During the year, 1,704 cases were admitted to Government hospitals with 33 deaths compared with 1,691 and 62 for last year. There were included in the above 7 cases of black water fever with 2 deaths.

17. *Cholera*. An outbreak of cholera in Thailand (Siam) caused some anxiety but no case occurred in Kelantan. Wells were pinked at regular intervals during the dangerous period, and 253 persons travelling to Thailand were inoculated. One hundred and seventy eight (178) inoculations were also given to Pilgrims leaving for Mecca.

18. *Small-pox*. No case of small-pox occurred. Five thousand three hundred and ninety eight (5,398) vaccinations were done by the department, including those by two vaccinators who tour the State systematically district by district.

19. *Tropical typhus*. There were two cases of tropical typhus (one urban and one rural) with no deaths.

20. *Enteric Fever*. Five (5) cases of typhoid with two (2) deaths and one case of paratyphoid with no deaths, were admitted to hospital. Of these, four came from Kota Bharu, one from Tumpat and one from Bertam. Preventive measures included numerous inoculations with T.A.B. vaccine.

21. *Dysentery and Diarrhoea*. No outbreak of an epidemic nature occurred. One hundred and nineteen (119) cases were admitted to hospitals, compared with 126 the previous year; 55 were diagnosed as amoebic and 12 as bacillary. There were 8 deaths.

22. *Leprosy*. It is estimated that there may be about 400 lepers in the State of whom about 100 are known and registered. A small settlement on the sea coast at Tumpat housed nineteen (19), while 8 are maintained at Government expense in hospitals outside the State. The remainder are kept under observation in as much isolation as possible in their own villages.

Plans were continued during the year for the provision of a new Leper Settlement at a selected and reserved site but the outbreak of hostilities in September caused the project to be shelved for the time being.

23. *Tuberculosis*. In common with other Malay States, Kelantan suffers considerably from pulmonary tuberculosis. It is supposed that the true incidence is much greater than that shown in the disease returns but perhaps we are not as badly off as other less agricultural populations of this Peninsula. One hundred and fifty six (156) cases were admitted to hospitals with 46 deaths compared with 178 and 65 the previous year.

There is no proper sanatorium accommodation but all Government hospitals accept cases and at Kota Bharu there is a special ward with 20 beds for males.

24. *Mumps*. One (1) case was admitted to Government hospitals.

25. *Measles*. One (1) case was admitted.

26. *Chicken-pox*. Chicken-pox is exceedingly common and very mild, practically every child in the State gets it and except to verify that it is not small-pox, not much notice need be taken of it. Fourteen (14) cases were admitted to hospitals.

27. *Venereal Diseases*. The figures in the appendices are quite a wrong indication of the incidence of venereal diseases in the State. The true position is unknown, one's general impression being that gonorrhoea is exceedingly common though very mild, severe complications such as ophthalmia, arthritis, and so on very rarely being seen, while the picture regarding syphilis is obscured by the prevalence of yaws. It is supposed that amongst the indigenous population syphilis is practically unknown although a fair amount exists amongst the more sophisticated urban dwellers.

28. *Yaws* is very common indeed and although it is no exaggeration to say that it is rapidly succumbing to the onslaughts of the arsenicals yet sabre tibias, perforated palates and fallen noses are so common amongst the peasantry as to be accepted as a matter of course.

29. There was no plague, cerebrospinal meningitis or diphtheria.

VIII. — PUBLIC HEALTH.

30. There are five administrative districts in the State in charge of District Officers and in each general sanitary work was carried out in all the important towns and notified areas with the co-operation of the Chief Medical Officer and Staff of this Department. In Kota Bharu Town general sanitation was controlled by a Town Board of which the Chief Medical Officer is a member.

31. *Anti-malarial work* was continued in the main centres of population, oiling and temporary drainage being the principle activities. Fifteen thousand one hundred and four (15,104) gallons of anti-malarial mixture and 62 gallons of petrol were used, the total cost being \$9,071.78 made up of \$5,453.71 in salaries and wages and \$3,618.07 for oil and implements. The whole was controlled by regular larval surveys.

32. *Sewage Disposal* in the large centres was by the single bucket system and trenching, in Kota Bharu, Pasir Mas and Pasir Puteh the work being done by contractors and in Tumpat and Kuala Krai departmentally. Motor lorries were used for transport to the trenching ground in Kota Bharu. In sanitary board areas the provision of sanitary latrines for dwellings was enforced and standards are slowly but very surely being raised in this

respect. A few bungalows in various parts of the State have septic tank or other water-borne installations.

In Kota Bharu 915 night soil buckets were removed and cleaned daily, in Kuala Krai 180, Pasir Mas 94, Pasir Puteh 108 and Tumpat 147.

33. *Domestic refuse* was collected and incinerated in the five main centres, four motor lorries being used for this purpose in Kota Bharu and hand or bullock carts in the other places. Existing incinerators at Kota Bharu are inadequate.

34. *Water Supply.* A small installation of piped water was completed in Kuala Krai to serve the hospital and environs and investigations were continued for a larger supply for the town.

In Kota Bharu some alterations in aeration of the water resulted in a very great improvement of it. The reticulation continued to be extended and the following figures show the average approximate daily consumption for the past three years:—

1937	..	..	..	90,411 gallons
1938	..	..	..	124,557 „
1939	..	..	..	168,492 „

All premises licensed to prepare or sell food or drink are obliged to provide themselves with this piped water.

The source is three specially constructed deep wells from which water is electrically pumped through the aeration plant to a service reservoir holding 40,000 gallons whence the town is supplied by gravity. Samples from the reservoir and from the reticulation were examined at the Institute for Medical Research, Kuala Lumpur monthly, bacteriologically and chemically and the results are consistently satisfactory.

In other towns and villages water is obtained from wells, streams and rivers and it is feared leaves much to be desired although known outbreak of water-borne disease are conspicuous by their absence.

35. All offensive and dangerous trades are licensed, they are inspected regularly and sanitary requirements enforced. Cattle sheds are not permitted within town board limits and piggeries are confined to the remoter outskirts.

IX. — SCHOOLS.

36. Thirty (30) schools were medically inspected and 2,325 pupils examined. Apart from chicken-pox which is always with us there was no serious epidemic of infectious disease in any school. There was a small outbreak of mild measles in Kota Bharu.

37. The provision of milk to all the pupils (98) at one of the schools which was started in 1938 was continued throughout the year at a cost to

KELANTAN MEDICAL DEPARTMENT ANNUAL REPORT, 1939.

Erratum:

Paragraph 45, page 7, should read as follows:—

45. The death rate amongst Indians was 23.27 per mille compared with 27.91 last year. Births were 104 with 19 infantile deaths giving an infantile mortality rate of 183 per mille. The corresponding figures for 1938 were 87, 28 and 322."

LIST OF NAMES OF THE MEMBERS OF THE SOCIETY

The names of the members of the Society are as follows:—
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Government of \$187.11. Pupils paid a proportion of the cost according to their means. No measurements of the children (or any system of control) were made so that this milk-drinking cannot be regarded as a nutrition experiment. It is hoped that the advertisement afforded to milk drinking will encourage the raising of cattle but the milk used was sweetened condensed milk of a well known proprietary brand.

38. 8.99% of the pupils examined were found to be suffering from various skin diseases. Three cases of early leprosy were discovered, and 59 cases of active yaws. 1.2% of the children had enlarged tonsils and the spleen rate was 2.5%.

X. — LABOUR.

39. Most of the larger rubber estates employ Southern Indian labour although taking the State as a whole there are many more Malays employed than any other nationality. All Estates and other places of employment having a sufficient number of resident labourers to come under the Labour Code were visited at least once by the Chief Medical Officer and by the Deputy Controller of Labour.

Monthly inspections were made by the Medical Officer, Ulu Kelantan.

40. The larger estates employ qualified dressers and are provided with hospitals and dispensaries. All cases of serious illness are sent to Government hospitals where free facilities are given for maternity cases including ante-natal and post-natal attention.

41. In estates subject to medical inspection anti-malarial and other hygienic measures are maintained. The incidence of malaria at the Japanese iron mine at Temangan still leaves much to be desired but some improvement was shown. The removal towards the close of the year of a number of lines from a malarious ravine area to a healthier cleaner place inspires hope for next year.

42. Most cooly lines are of temporary or semi-permanent construction but improvement has been maintained as in previous years and the housing of labourers on estates and other places of employment is rapidly approaching a highly satisfactory state.

43. All places of residence of labour have sufficient latrines, mostly of the bore-hole or pit type but there are some bucket ones. Water supply is chiefly from protected wells but some estates have a piped supply.

44. The general health of the labour forces has been satisfactory. Total deaths from all causes were 85. Details may be found in Appendix XI.

45. The death rate amongst Indians was 23.27 per mille compared with 27.91 last year. Births were 104 with 29 infantile deaths giving an infantile mortality rate of 279 per mille. The corresponding figures for 1938 were 87, 28 and 322. *See slip*

XI. — HOUSING AND TOWN PLANNING.

46. The new town area of Kota Bharu which is well laid out has been considerably improved, a block of about 35 houses, old and insanitary, was demolished, and as previously all new shop houses are substantial buildings of approved design. Twenty seven (27) plans were passed and 19 new shop houses were built in this area.

47. Outside the shopping district but within the Kota Bharu Town Board area forty seven plans for new dwellings were approved and 64 for alterations or additions.

48. Town drainage was again improved by constructing 1,182 feet of concrete drains in Kota Bharu, 1,435 feet in Pasir Puteh and 773 feet in Kuala Krai.

49. In Ulu Kelantan (Kuala Krai) 26 old and insanitary dwellings were demolished and 8 underwent approved renovations. Shop houses were 2 constructed, 5 plans approved and 16 repaired.

50. For Pasir Mas the figures were dwellings demolished 59, new constructions 20, repairs 12 and shophouses constructed (semi-permanent) 17, altered 1 and plans approved 2.

51. In Pasir Puteh seven new shophouses and one dwelling were built.

XII. — FOOD IN RELATION TO PUBLIC HEALTH.

52. All premises used for the preparation or sale of food or drink are subject to inspection and control. Lodging houses, eating shops, coffee shops, bakeries, dairies, aerated water factories, ice-cream factories and soda fountains must be licensed and a licence is refused unless all sanitary measures required by the Chief Medical Officer are provided. In Kota Bharu a piped water supply is compulsory.

53. Street stalls and hawkers are controlled and licensed. Hawkers are all medically examined and their number is strictly limited. Communicable disease disqualifies.

54. All towns and most of the larger villages have markets where cheap and adequate facilities are provided for the country people to sell their produce the variety of which is bewildering. Most interesting are the "kepala bakol" (literally "head basket") people who walk in many miles to markets with baskets balanced on their heads, to earn a few cents by the sale of eggs, fish, vegetables, fruit, candy, sugar cane or any of the thousand and one products of their labour.

55. A new arrival from elsewhere in Malaya, which we call "the other side" will be struck firstly by the fine physique and healthy appearance of the peasant Kelantanese and secondly by the wide variety of foodstuffs in their markets. To see a string of women with baskets on their heads

provokes the thought that it is these baskets that make them so fit and vigorous, and so it is, but not so much from balancing the baskets as from eating the contents.

56. An interesting observation of dietary deficiency is that parenchymatous goitre is endemic in the Olak Jeram district. I have no first-hand knowledge of this but am reliably informed that in this area which is practically the very centre of the Malay Peninsula, "Derbyshire neck" is quite common.

XIII. — PORT HEALTH ADMINISTRATION.

57. Kelantan has no port designated under Article 28 of the International Sanitary Convention of 1926. Coasting steamers plying between Singapore and Bangkok call at Tumpat where the Chief Hospital Assistant is Deputy Health Officer and boards all these vessels and inspects passengers. Smaller craft are boarded by the Customs Officers and if any passenger wishes to disembark or if there is sickness on board the Deputy Health Officer is informed.

58. Two hundred and three (203) passenger steamers with 276 passengers consisting of 27 Europeans and 249 Asiatics called at Tumpat during the year. No case of infectious disease was found.

XIV. — MATERNITY AND CHILD WELFARE.

59. There is no special Maternity Hospital in the State but ample accommodation is available in the Kota Bharu Hospital where amongst others wives of estate labourers are admitted free of any charges. Two hundred and forty one (241) deliveries were recorded compared with 202 in 1938.

60. The following table gives the figures for the last five years:—

Years.	Indians.	Chinese.	Malays.	Japanese.	European.	Others.	Total.
1935	40	24	2	1	1	—	68
1936	57	52	3	2	1	1	116
1937	122	59	1	2	2	1	187
1938	98	98	2	2	1	1	202
1939	116	112	7	1	3	2	241

61. The training of local girls to be "Bidans" that is "handy-women" or native midwives suffered a set-back during the year owing to the failure to find suitable candidates. Very few Kelantan women have even the most elementary knowledge of the three R's and nothing could be done about it.

62. The work of the Infant Welfare Centre however continues to increase and it was found necessary to provide a dresser to assist in dispensing. The aim of the Centre is not so much to provide treatment for sickness as to offer antenatal and postnatal advice to prevent sickness. This

aim is a long way from attainment, but an enormous amount of good work is being done as the following figures show:—

Visits to patients' own houses:—

	1938.	1939.
Newly born babies	1,323	1,451

Visits to Women:—

Malays	1,440	1,934
Others	1,398	1,690

Visits to Children:—

Malays	1,195	1,606
Others	965	1,415

Total ..	6,321	8,096
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The above figures include 7 women delivered in their own homes by officers of this department.

Attendances at the Centre:—

	1938.	1939.
Children and Infants	2,736	2,626
Ante-natal	168	191
Total number of attendances ..	13,187	13,689

XV.—HOSPITALS AND DISPENSARIES.

A. — In-patients.

63. The following table is self explanatory:—

HOSPITALS.	Average daily No. of in-patients.	In-patients treated.			Deaths.	Percentage of deaths to total treated.
		Males.	Females.	Total.		
Kota Bharu	250	3,112	797	3,909	144	3.66
Kuala Krai	48	1,521	208	1,729	68	3.93
Mental Hospital ..	49	74	37	111	1	.9

64. *Venereal Diseases.* There were 89 admissions for syphilis, 145 for gonorrhoea and 5 with soft sore while 2,399 cases were treated as out patients at the various hospitals and dispensaries throughout the State. As stated in paragraph 27 of this report these figures are no indication of the incidence of venereal disease. All treatment was free and secret. (See also paragraph 94).

65. *Pneumonia*. The following table gives the total number of cases of pneumonia (all forms) admitted for the past 5 years:—

Years.	No. of cases.	No. of deaths.	Death rates.
1935	123	31	25.27%
1936	123	48	39.02%
1937	118	36	30. 5%
1938	67	13	19.40%
1939	79	20	25.32%

It will be seen that the death rate has not responded to chemotherapy with sulphapyridine which was given to every case. The numbers are too few to be conclusive but the rate is nevertheless disappointing.

66. *Phthisis*. The number of admissions was 156 compared with 178 last year. Seven (7) were Government servants all of whom are examined annually for signs of the disease.

67. *Dysentery*. Eighty five (85) cases were admitted, 55 being amoebic, 12 bacillary, 2 mixed and 16 not specified. The total last year was 81.

68. *Beri-beri*. Sixty five (65) frank cases were admitted but the number of minor degrees of vitamin B1 deficiency was very many more, labelled with other diagnoses. Most were mining labourers of whom 33 were Chinese.

69. *Chronic Ulcers*. Three hundred and twenty three (323) cases were admitted for treatment, compared with 341, last year. This does not include ulcers from some specific cause such as Yaws.

70. *Wounds resulting from Assaults*. It is refreshing to one coming from a more sophisticated part of Malaya to notice the extreme rarity of road accident cases but assaults with the "Klewang" nearly make up the deficiency. The "Klewang" is a sickle-shaped general utility instrument and its wounds though particularly penetrating heal remarkably well and no one seems to mind them very much. The following table gives totals of all assault cases:—

1935	492
1936	452
1937	706
1938	495
1939	253

71. *Cost of diets*. The approximate daily cost per head for in-patients in Government Hospitals was, First Class \$1.00, Second Class 35 cents and Third Class 15 cents.

B. — Out-patients.

72. A total of 192,692 out-patients were treated at Government Hospitals, Fixed and Travelling Dispensaries and the Infant Welfare Centre.

73. AT HOSPITALS:—		Patients.		Attendances.	
		1938.	1939.	1938.	1939.
(a)	Kota Bharu ..	21,860	15,480	25,043	18,410
(b)	Kuala Krai ..	14,745	9,938	19,420	13,704
74. AT DISPENSARIES:—					
(a)	Pasir Puteh ..	7,781	9,989	17,328	15,511
(b)	Tumpat ..	8,495	9,234	17,611	17,464
(c)	Pasir Mas ..	13,104	9,683	17,592	11,967
(d)	Bachok ..	8,770	8,578	10,773	12,383
(e)	Inf. Welf. Centre ..	5,455	4,178	13,187	13,689
(c)	Gua Musang ..	2,182	606	3,101	1,115
	Total ..	83,392	73,961	124,055	111,896

75. AT TRAVELLING DISPENSARIES:—		Attendances.	
		1938.	1939.
(a)	<i>Ulu Kelantan District:</i>		
	Out-board motor prahu	9,499	7,867
(b)	<i>Pasir Mas District:</i>		
	Pack Dispensary	7,750	6,670
(c)	<i>Tumpat District:</i>		
	Pack Dispensary	6,956	7,922
(d)	<i>Kemuning and Temangan:</i>		
	Motor Travelling Disp.	24,059	16,189
(e)	<i>Bachok District:</i>		
	Motor Travelling Disp.	39,130	26,367
(f)	<i>Kota Bharu District:</i>		
	Out-board motor prahu	17,200	15,781
	Total attendances ..	104,544	80,796

76. The reason for the diminution is not known, one must admit being disappointed but perhaps it is merely that the first excited interest of the people in the new "medicine shops" is wearing off. It is certain that as a result of a few years of treatment such diseases as yaws and fungus infections of the skin are greatly diminished in their incidence but it is not supposed that this will account entirely for the decrease in attendances.

77. Pack Dispensary Units consist of one dresser and three coolies who travel on foot using bridle paths, traversing their districts once a month the itinerary being so arranged that two days in each week may be spent at headquarters for replenishment of stores.

78. The out-door dispensaries at Tumpat and Pasir Mas have each a small ward for emergency cases, having two and eight beds respectively.

79. The total attendances for treatments for yaws was 18,818 compared with 21,957 in 1938. The following table gives details:—

	New Cases.		Repetitions.	
	1938.	1939.	1938.	1939.
Intravenous injections (mostly N.A.B.) ..	7,003	8,444	1,948	1,819
Other forms of medication (mostly Stovarsol orally) ..	9,588	7,098	3,418	1,457
Total ..	16,591	15,542	5,366	3,276

Year.	Malays.	Chinese.	Indians.	Others.	Total.
1938 ..	19,225	1,428	277	1,027	21,957
1939 ..	17,435	733	234	416	18,818

C. — Pathological.

80. The total number of examinations made was 23,380 compared with 22,033 last year. Details follow:—

	1938.	1939.
Autopsies	19	17
KAHN TESTS:—		
Negative	—	219
Positive	—	268
Total	429	487
Smears for organisms	968	1,190
Urine, chemical & microscopic	6,054	6,619
FAECES:—		
Ascaris	—	2,177
Ankylostomes	—	1,772
Others	—	2,398
Total	5,021	5,387*
BLOOD FILMS FOR MALARIA:—		
Sub-tertian	—	1,152
Benign-tertian	—	422
Quartan	—	96
Mixed	—	128
Negative	—	7,806
Total	9,534	9,604

*This is not a simple addition owing to the occurrence of mixed infections.

Blood counts	.. .. .	8	68
Filaria in blood films	.. .. .	—	3
Widal and Weil-Felix	.. .. .	—	9

81. Water samples were sent for bacteriological and chemical analyses to the Institute for Medical Research, Kuala Lumpur, as follows:—

				Chem. Exam.	Bact. Exam.
Kota Bharu	..	..	..	19	19
Kuala Krai	..	..	..	5	5
Bachok	..	..	..	7	7
Pasir Mas	..	..	..	1	1
Bukit Tanah, Tumpat	..		..	1	1
R.A.F. Station	..	..	..	1	1
				<hr/>	<hr/>
Total	..	..	..	34	34

D. — European Hospital.

82. The European Hospital is a very pleasant airy nursing home type of establishment about quarter of a mile away from the main hospital. If distance lends enchantment it also lends administrative difficulty which however did not worry the patients.

83. Thirty five (35) patients were admitted during the year. In 1938 there were 33. Of the 35, 18 were planters, 4 from commercial firms, 12 Government servants and 1 Royal Air Force. These figures include wives and dependents. There were 23 males and 12 females. Fourteen (14) were admitted for malaria (2 Government servants and 12 planters) and 3 for parturition. There were no deaths.

E. — Mental Hospital.

84. Accommodation for mental cases is in a special hospital in Kota Bharu and consists of 3 male and 1 female wards and 6 masonry cells. This accommodation is for observation cases only and whenever possible certificated lunatics are transferred to Singapore or Tanjong Rambutan.

85. The total number treated was 166 compared with 145 last year and admissions were as follows:—

		1938.	1939.
Males	.. .. .	76	74
Females	.. .. .	24	37
Total	.. .. .	100	111

86. Discharges were as follows, figures in brackets being the previous year's for comparison:—

	Males.	Females.	Total.
Recovered	35 (10)	20 (nil)	55 (10)
Relieved	12 (8)	2 (nil)	14 (8)
Not improved	3 (30)	2 (19)	5 (49)
Transferred to Singapore ..	24 (18)	6 (nil)	30 (18)
Died	1 (3)	nil (nil)	1 (3)
Absconded	1 (2)	2 (nil)	3 (2)
Total	76 (71)	32 (19)	108 (90)

The number remaining on December 31st was 58 comprising 14 males and 17 females. The maximum and minimum were 58 and 37.

87. On 31st December there were 6 Kelantan patients maintained at this Government's expense at the Central Mental Hospital, Tanjong Rambutan, and 75 at the Mental Hospital, Singapore.

F. — Leper Settlement.

88. Lepers are accommodated at a small camp situated at a healthy spot on the sea coast about two miles from Tumpat. There is accommodation for a few males who are very contented and progress very favourably (see paragraph 22).

89. The table following shows the in-patients:—

	1938.	1939.
Remaining on January 1st ..	12	15
Admitted	6	5
Total	18	20
Discharged cured	3	—
Absconded	—	1
Remaining on December 31st ..	15	19
Maintained at Pulau Jerejak (Penang)	6	6
Maintained at Sungei Buloh (Selangor)	2	2

G. — Prisons.

90. No prison hospital is available but there are special lock-up wards at Kota Bharu and Kuala Krai Hospitals to which 102 prisoners were admitted; 107 were discharged and 1 died.

91. The general health of prisoners was good and no deficiency was recorded. The prisons were visited daily by medical department staff and at intervals by the Chief Medical Officer.

H. — Miscellaneous.

92. *Surgery.* The total number of operations performed in Government Hospitals was 503 with 6 deaths as against 636 with 11 deaths the previous year. Thirty seven (37) were major operations performed in Kota Bharu Hospital.

93. *Radiology.* The Kota Bharu Hospital has a small portable shock-proof apparatus which is not adequate. Screening of fractures was about all that could be done. No facilities existed for electro-therapy.

94. *Social Hygiene.* There is no special social hygiene organisation and no special clinics for the treatment of venereal diseases but free treatment is available at all the hospitals and dispensaries and is considered adequate. Venereal disease is not a very serious problem in Kelantan, the incidence of syphilis is not great and the severity of gonorrhoea mild. The locals are not shy or ashamed of it and as a result it may be treated just like any other disease at the ordinary centres.

The number of new cases for each of the past five years follows, but this is not an indication of the real incidence (see paragraphs 27 and 64).

Years.				Cases.
1935	..	..	..	2,533
1936	..	..	..	2,865
1937	..	..	..	2,242
1938	..	..	..	3,688*
1939	..	..	..	2,638

W. GLYN EVANS,
*Chief Medical Officer,
Kelantan.*

*Probably the new broom of the Welfare Centre sweeping clean.

Appendix I.

General Hospital.

Chief Medical Officer	..	..	..	..
Medical and Health Officer	..	..	..	..	in abeyance
Asst. Medical and Health Officer	..	..	..	..	1 /
Assistant Medical Officer	..	..	..	..	1 /
Chief Hospital Assistant	..	..	..	..	1
Hospital Assistants	..	..	..	..	2
Dressers Grade II	..	..	..	..	5
Dressers Grade III	..	..	..	..	4
Probationer Dressers	..	..	..	..	6
Chief Dispenser Grade I	..	..	..	..	1
Laboratory Asst. (Dresser G. III)	..	..	..	..	1
Veterinary Inspector	..	..	..	..	1
Health Inspector	..	..	..	..	1
Store-Keeper ' (Dresser Grade II)	..	..	..	..	1
Clerical Staff	..	..	..	..	4
Vaccinators	..	..	..	..	2
Peons	..	..	..	..	3
Attendants	..	..	..	..	21
Cooks	..	..	..	..	4
Gardeners	..	..	..	..	4
Bullock-Cart Driver	..	..	..	..	1
Toties	..	..	..	..	4
Watchman	..	..	..	..	1
Tukang Ayer	..	..	..	..	5

European Hospital and Asiatic Female Wards.

Matron (assists in supervision of Female Hospital)					
Asst: Lady Medical Officer	..	..	..	..	1
Staff Nurses	..	..	..	..	3
Infant Welfare Nurse	..	..	..	..	1
Cook (European Hospital)	..	..	..	..	1
Boys (do. )	..	..	..	..	2
Servant to Matron	..	..	..	..	1
Sewing Ayah	..	..	..	..	1

Attendants—Females	..	..	..	..	8
Cook (Female Hospital)	..	..	..	..	1
Tukang Ayer (European Hospital)	..	..	..	..	1
Gardener (do.)	..	..	..	..	1
Toties (European & Female Hospital)	..	..	..	..	2
Watchman (Female Hospital)	..	..	..	..	1

Kuala Krai Hospital.

Medical Officer	..	..	..	..	Part-time
Assistant Medical Officer	..	..	..	..	1
Dresser Grade II	..	..	..	..	1
Dresser Grade III	..	..	..	..	1
Attendants	..	..	..	..	6
Attendant—Female	..	..	..	..	1
Cooks	..	..	..	..	2
Toties	..	..	..	..	2
Gardener	..	..	..	..	1
Watchman	..	..	..	..	1

Tumpat Dispensary.

Deputy Health Officer (Ch. Hosp. Asst.)	..	..	..	..	1
Attendant	..	..	..	..	1
Watchman	..	..	..	..	1

Pasir Puteh Dispensary.

Dresser-in-Charge (Hosp. Asst)	..	..	..	..	1
Attendant	..	..	..	..	1

Pasir Mas Dispensary.

Dresser-in-Charge (Hosp. Asst)	..	..	..	..	1
Attendant	..	..	..	..	1

Bachok Dispensary.

Dresser-in-Charge	..	..	..	..	1
Attendant	..	..	..	..	1

Gua Musang Dispensary.

Dresser-in-Charge	..	..	..	..	1
Attendant	..	..	..	..	1

Travelling Dispensaries.*Out-Board Motor Prah, Ulu Kelantan District:—*

Dresser Grade III	..	..	..	1
Steersman—Attendant	..	..	..	1

Out-Board Motor Prah, Kota Bharu District:—

Dresser Grade III	..	..	..	1
Steersman—Attendant	..	..	..	1

Motor Travelling Disp., Pasir Puteh District:—

Dresser Grade II	..	..	..	1
Driver—Attendant	..	..	..	1

Motor Travelling Disp., Ulu Kelantan Districts:—

Dresser Grade III	..	..	..	1
Driver—Attendant	..	..	..	1

Travelling Pack Dispensary, Pasir Mas District:—

Dresser Grade III	..	..	..	1
Coolies	..	..	..	3

Travelling Pack Dispensary, Tumpat District:—

Dresser Grade III	..	..	..	1
Coolies	..	..	..	3

Anti-Malarial Works, Kota Bharu.

Health Inspector	..	..	..	1
Mandor	..	..	..	1
Coolies	..	..	..	9

Anti-Malarial Works, Kuala Krai.

Sanitary Inspector	..	..	..	1
Anti-Malarial Overseer	..	..	..	1
Mandor	..	..	..	1
Coolies	..	..	..	14

Anti-Malarial Works, Pasir Mas.

Oiling Cooly	1
--------------	----	----	----	---

Anti-Malarial Works, Pasir Puteh.

Oiling Cooly	1
--------------	----	----	----	---

Anti-Malarial Works, Gua Musang.

Oiling Cooly	1
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Appendix II.

EXPENDITURE, 1939.

Personal Emoluments	\$78,967.28
Children Allowance	1,370.32
Temporary Allowance	..	..	..	..	..	1,524.00
Motor Car Allowance	..	..	..	..	..	3,142.26
Motor Cycle Allowance	..	..	..	..	..	47.50
Bicycle Allowance	..	..	..	..	..	180.00
Allowance to Dr. W. J. Geale	..	..	..	..	..	2,400.00
Allowance Rations to Nurses	..	..	..	..	..	1,830.00
Allowance Washing	„	..	..	..	..	585.00
Allowance Transport	„	..	..	..	..	1,710.00
Allowance Uniform	..	..	..	..	..	1,287.33
Allowance to 'Bidans'	..	..	..	..	..	315.00
Allowance Travelling & Personal	..	..	..	..	..	4,414.58
Wages Hospital Servants, Anti-Malarial Mandors & Coolies	..	..	..	..	..	24,688.60
Contingent Expenses	..	..	..	..	..	758.44
Laundry	..	..	..	..	..	1,320.00
Anti-Malarial Works Etc.	..	..	..	..	..	5,494.57
Lighting	..	..	..	..	..	4,356.33
Diets and Extras	..	..	..	..	..	25,504.07
Equipment	..	..	..	..	..	4,524.68
Medicines and Instruments	..	..	..	..	..	29,910.50
Maintenance of Motor Travelling Dispensaries	..	..	..	..	..	2,695.15
Maintenance of Lunatics and Lepers	..	..	..	..	..	15,354.13
Rents for Infant Welfare Centre and Out-Station Dispensaries	..	..	..	..	..	545.00
House Rent Allowance	..	..	..	..	..	108.00
Telephone Subscription	..	..	..	..	..	685.00
Water Supply	..	..	..	..	..	645.85
Transfer of Lunatics	..	..	..	..	..	850.38
Experimental Milk Diets in Vernacular Schools	..	..	..	..	..	187.11
Purchase of Bicycle	..	..	..	..	..	49.00
Purchase of Out-Board Motor Prah	..	..	..	..	..	190.00
Equipment for First Class Ward	..	..	..	..	..	1,894.88
Purchase of Motor Units for refrigerator	..	..	..	..	..	189.87
Grand total	..	..	..	..	..	\$217,724.83

Appendix III.
REVENUE, 1939.

Kota Bharu:—

Hospital Fees & Sales of Medicines	..	\$7,541.91	
Licence Fees	.. ..	240.00	
Misc. Receipts (Births & Deaths)	..	443.00	
Miscellaneous	.. ..	19.36	\$8,244.27
		<hr/>	

Kuala Krai:—

Hospital Fees and Sales of Medicines	..	1,590.18	
Miscellaneous	.. ..	31.38	1,621.56
		<hr/>	

Tumpat Dispensary:—

Hospital Fees and Sales of Medicines	..	521.85	521.85
		<hr/>	

Pasir Mas Dispensary:—

Hospital Fees & Sales of Medicines	..	5.10	5.10
		<hr/>	

Grand total		<hr/>	\$10,392.78
		<hr/>	

Appendix IV.

KELANTAN GOVERNMENT HOSPITALS.

Return of Diseases and Deaths for the year 1939.

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>I. Infectious and Parasitic Diseases.</i>								
1. Typhoid fever	2	5	7	5			2	
2. Paratyphoid fever		1	1	1				
3. Typhus:—								
(1) Typhus exanthematicus ..								
(2) Tropical typhus		2	2	2				
(3) Japanese river fever ..								
(4) Other rickettsia infections ..								
4. Relapsing fever								
5. Undulant fever								
6. Small-pox								
7. Measles		1	1	1				
8. Scarlet fever								
9. Whooping cough		2	2	2				
10. Diphtheria								
11. Influenza:—								
(1) with pneumonia								
(2) with other respiratory complications								
(3) without respiratory complications		92	92	92				
12. Cholera								
13. Dysentery:—								
(1) Amoebic		55	55	50			4	1
(2) Bacillary		12	12	11			1	
(3) Mixed		2	2	1			1	
(4) Undefined or due to other causes	2	16	18	15			2	1
14. Plague:—								
(1) Bubonic								
(2) Pneumonic								
(3) Septicaemic								
(4) Undefined								
15. Erysipelas		2	2	2				
16. Acute Policmyelitis:—								
(1) Acute poliomyelitis		2	2	2				
(2) Acute polioencephalitis ..								
17. Encephalitis lethargica								
18. Cerebro-spinal fever								
19. Glanders								
20. Anthrax								
21. Rabies								
22. Tetanus:—								
(1) Tetanus of the newly born		1	1				1	
(2) Other forms of tetanus ..		1	1				1	
23. Tuberculosis of the respiratory system	23	156	179	102		2	46	29
24. Tuberculosis of the central nervous system								
25. Tuberculosis of the intestines or peritoneum								
<i>Carried forward</i> ..	27	350	377	286		2	58	31

DISEASES.		Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
	<i>Brought forward</i> ..	27	350	377	286		2	58	31
26.	Tuberculosis of the vertebral column								
27.	Tuberculosis of other bones and joints								
28.	Tuberculosis of the skin or subcutaneous tissue (lupus) ..		2	2	2				
29.	Tuberculosis of the lymphatic system		1	1	1				
30.	Tuberculosis of the genito-urinary system								
31.	Tuberculosis of other organs:—								
	(1) Adrenal								
	(2) Other sites		2	2	2				
32.	Tuberculosis disseminated:—								
	(1) Acute								
	(2) Chronic		2	2	2				
	(3) Not distinguished as acute or chronic		2	2	2				
33.	Leprosy	16	16	32	9		3		20
34.	Syphilis:—								
	(1) Primary	3	37	40	40				
	(2) Secondary	1	13	14	13		1		
	(3) Tertiary	2	18	20	15			1	3
	(4) Hereditary								
	(5) Period not indicated ..	1	21	22	17			3	2
35.	Other venereal diseases:—								
	(1) Soft chancre		5	5	4				1
	(2) Gonorrhoea and its complications	9	107	116	109		2		5
	(3) Gonorrhoeal ophthalmia ..		4	4	4				
	(4) Gonorrhoeal arthritis ..	5	34	39	37				2
	(5) Granuloma venereum ..								
	(6) Tropical bubo	1	29	30	28				2
36.	Purulent infective septicaemia:—								
	(1) Septicaemia		4	4				4	
	(2) Pyaemia		3	3				2	1
	(3) Gas-gangrene								
37.	Fever unclassified		71	71	69			1	1
38.	Malaria:—								
	(1) Tertian (benign)	6	310	316	306			1	9
	(2) Quartan	3	67	70	64			3	3
	(3) Aestivo-autumnal (subtertian)	10	921	931	903			19	9
	(4) Mixed infections	3	47	50	46			4	
	(5) Unclassified	8	275	283	277		2		4
	(6) Cachexia	1	77	78	70			4	4
	(7) Blackwater fever	1	7	8	6			2	
39.	Other diseases due to Protozoa:—								
	(1) Yaws (framboesia) ..	21	204	225	211		4		10
	(2) Spirochaetosis icterohaemorrhagica								
	(3) Leishmaniasis (dermal) ..								
	(4) Kala-azar								
	(5) Other diseases:—								
40.	Ankylostomiasis	4	146	150	148			2	
41.	Hydatid cysts								
	<i>Carried forward</i> ..	122	2775	2897	2672		14	104	107

DISEASES.		Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..		122	2775	2897	2672		14	104	107
42.	Other diseases due to Helminths:—								
	CESTODES.								
	(1) <i>Taenia solium</i>		1	1	1				
	(2) <i>Taenia saginata</i>								
	(3) Other cestodes								
	NEMATODES.								
	(4) <i>Filaria</i>		3	3	3				
	(5) <i>Ascaris</i>		103	103	103				
	(6) <i>Trichuris trichiura</i>								
	(7) <i>Oxyuris vermicularis</i>								
	(8) <i>Dracunculus medinensis</i>								
	(9) <i>Schistosomum japonicum</i>								
	(10) <i>Clonorchis sinensis</i>								
	(11) Other helminths								
43.	(1) Sprue								
	(2) Actinomycosis								
	(3) Other mycotic infections excluding purely dermal mycosis								
44.	Other infectious or parasitic dis- eases:—								
	(1) Vaccinia including post vaccinal encephalitis								
	(2) Other sequelae of vaccina- tion								
	(3) Rubella								
	(4) Varicella (chicken-pox)	1	14	15	15				
	(5) Mumps and its complications		1	1	1				
	(6) Dengue								
	(7) Melioidosis								
	(8) Myiasis								
	(9) Glandular fever								
	(10) Others								
II.	<i>Cancer and other Tumours:—</i>								
45.	Cancer or other malignant diseases of the buccal cavity, & pharynx								
46.	Cancer or other malignant tumours of the digestive organs, and peritoneum:—								
	(1) Stomach								
	(2) Liver (primary)		2	2	1			1	
	(3) Other digestive organs		1	1				1	
47.	Cancer or other malignant tumours of the respiratory organs								
48.	Cancer or other malignant tumours of the uterus		1	1	1				
49.	Cancer or other malignant tumours of other female genital organs		1	1				1	
50.	Cancer or other malignant tum- ours of the breast								
51.	Cancer or other malignant tumours of the male genito-urinary organs	1	4	5	4			1	
52.	Cancer or other malignant tumours of the skin								
53.	Cancer or other malignant tumours of organs not specified								
<i>Carried forward</i> ..		124	2906	3030	2801		14	108	107

DISEASES.		Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..		124	2906	3030	2801		14	108	107
54.	Tumours non-malignant:—								
	(1) Female genital organs ..								
	(2) Of other sites ..		19	19	19				
55.	Tumours of undetermined nature:—								
	(1) Female genital organs ..		1	1	1				
	(2) Other sites ..	1	1	2	2				
<i>III. Rheumatism, Diseases of Nutrition and of Endocrine Glands and other General Diseases.</i>									
56.	Rheumatic Fever:—								
	(1) with cardiac involvement ..								
	(2) without cardiac involvement ..	1	1	2	2				
57.	Chronic rheumatism and osteoarthritis ..		33	33	31				2
58.	Gout ..		1	1	1				
59.	Diabetes (not including diabetes insipidus) ..	2	8	10	8			2	
60.	Scurvy (including Barlow's disease)		1	1	1				
61.	(1) Beri-beri including epidemic dropsy ..	10	65	75	62			7	6
	(2) Beri-beri associated with pregnancy or labour ..								
62.	Avitaminosis ..		2	2	2				
63.	Rickets ..		1	1	1				
64.	Osteomalacia ..								
65.	Diseases of the pituitary gland ..								
66.	Diseases of the thyroid and parathyroid glands:—								
	(1) Simple goitre ..								
	(2) Exophthalmic goitre ..								
	(3) Myxoedema, cretinism ..								
	(4) Tetany ..								
	(5) Other diseases of the thyroid glands ..								
67.	Diseases of the thymus ..								
68.	Diseases of the adrenal glands (excluding tuberculosis) ..								
69.	Other general diseases:—								
	(1) Acidosis ..								
	(2) Other diseases of metabolism								
<i>IV. Diseases of the Blood and Blood Forming Organs.</i>									
70.	Haemorrhagic conditions:—								
	(1) Purpura ..		1	1				1	
	(2) Haemophilia ..		2	2				2	
71.	Anaemia and chlorosis:—								
	(1) Pernicious anaemia ..								
	(2) Splenic anaemia ..								
	(3) Chlorosis ..								
	(4) Secondary anaemia ..	1	13	14	10			2	2
	(5) Others ..		18	18	15			3	
72.	Leukaemia:—								
	(1) Leukaemia ..								
	(2) Hodgkin's disease ..		2	2	1			1	
<i>Carried forward</i> ..		139	3075	3214	2957		14	126	117

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..	139	3075	3214	2957		14	126	117
73. Diseases of the spleen:—								
(1) Banti's disease ..								
(2) Others (not including diseases of the spleen due to malaria or leukaemia) ..								
74. Other diseases of the blood and blood forming organs ..		1	1	1				
V. <i>Chronic Poisoning.</i>								
75. Alcoholism (acute or chronic) ..		4	4	4				
76. Chronic poisoning by other organic substances:—								
(1) Opium ..	3	77	80	78		1		1
(2) Morphia, cocaine ..								
(3) Others ..		2	2	2				
77. Chronic poisoning by mineral substances:—								
(1) Lead poisoning ..								
(2) Arsenical dermatitis ..		3	3	3				
(3) Others ..		3	3	3				
VI. <i>Diseases of the Nervous System and Sense Organs.</i>								
78. Encephalitis (not including encephalitis lethargica):—								
(1) Cerebral abscess ..								
(2) Other forms of encephalitis ..		2	2				2	
79. Meningitis (not including tuberculous meningitis or cerebro-spinal meningitis) ..								
80. Tabes dorsalis (locomotor a axia) ..	1	5	6	5				1
81. Other diseases of the spinal cord ..		1	1					1
82. Apoplexy and paralysis:—								
(1) Cerebral haemorrhage ..								
(2) Cerebral embolism ..								
(3) Cerebral thrombosis ..		2	2				2	
(4) Hemiplegia, cause not determined ..	2	2	4	3				1
(5) Other paralysis ..		5	5	5				
83. General paralysis of the insane ..								
84. Other forms of insanity:—								
(1) Dementia praecox ..								
(2) Others ..	66	127	193	103	24		5	61
85. Epilepsy ..		2	2	1			1	
86. Infantile convulsions (age under 5 years) ..		3	3	3				
87. Other diseases of the nervous system:—								
(1) Chorea ..		1	1	1				
(2) Neuritis and neuralgia ..	2	18	20	20				
(3) Paralysis agitans ..								
(4) Disseminated sclerosis ..								
(5) Neurasthenia ..								
(6) Hysteria ..								
(7) Others ..		20	20	19				1
88. Diseases of the eye:—								
(1) Conjunctivitis ..	1	52	53	53				
<i>Carried forward</i> ..	214	3045	3619	3261	24	15	136	183

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..	214	3045	3619	3261	24	15	136	183
(2) Trachoma								
(3) Corneal ulcer		3	3	3				
(4) Other diseases of the eye ..	2	18	20	19				1
89. Diseases of the ear and/or the mastoid sinus:—								
(1) Otitis externa		5	5	5				
(2) Otitis media		6	6	6				
(3) Mastoiditis		4	4	4				
(4) Others		4	4	4				
VII. Diseases of the Circulatory System.								
90. Pericarditis		2	2	2				
91. Acute endocarditis:—								
(1) Malignant								
(2) Others								
92. Chronic endocarditis-valvular diseases:—								
(1) Aortic valve disease ..		1	1	1				
(2) Mitral valve disease ..		1	1				1	
(3) Aortic and mitral ..								
(4) Others		1	1	1				
93. Diseases of the myocardium:—								
(1) Acute myocarditis ..		1	1	1				
(2) Chronic myocardial degeneration								
94. Diseases of the coronary arteries:—								
(1) Angina pectoris								
(2) Coronary thrombosis ..								
(3) Coronary sclerosis ..								
95. Other diseases of the heart:—								
(1) Auricular fibrillation ..								
(2) Heart block		2	2				2	
(3) Others	1	3	4				4	
96. Aneurysm:—								
(1) Aneurysm of aorta ..								
(2) Aneurysm of other arteries ..		1	1	1				
97. Arterio-sclerosis		2	2	2				
98. Gangrene		1	1				1	
99. Other diseases of the arteries ..								
100. Diseases of the veins:—								
(1) Varicose veins								
(2) Haemorrhoids	1	8	9	9				
(3) Phlebitis								
(4) Thrombosis								
(5) Others		2	2	2				
101. Diseases of the lymphatic system:—								
(1) Lymphangitis		2	2	2				
(2) Lymphadenitis		2	2	2				
(3) Bubo (non-specified) ..		3	3	3				
102. Abnormalities of blood pressure:—								
(1) High blood pressure ..		1	1	1				
(2) Low blood pressure ..								
103. Other diseases of the circulatory system:—								
(1) Epistaxis								
(2) Others		1	1				1	
<i>Carried forward</i> ..	218	3479	3697	3329	24	15	145	184

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..	218	3479	3697	3329	24	15	145	184
<i>VIII. Diseases of the Respiratory System.</i>								
104. Diseases of the nasal fossae and its annexa:—								
(1) Diseases of the nose ..		2	2	2				
(2) Diseases of the accessory nasal sinuses ..		2	2	2				
105. Diseases of the larynx:—								
(1) Laryngismus stridulus ..								
(2) Laryngitis ..								
(3) Other diseases of the larynx								
106. Bronchitis:—								
(1) Acute ..		17	17	17				
(2) Chronic ..	4	22	26	25				1
(3) Not defined as acute or chronic ..	2	53	55	53				2
107. Broncho-pneumonia ..		7	7	2			5	
108. Lobar-pneumonia ..		37	37	26			10	1
109. Pneumonia (not otherwise defined)		35	35	29			5	1
110. Pleurisy ..								
(1) Empyema ..		2	2	2				
(2) Other pleurisy ..	2	8	10	10				
111. Congestion and haemorrhagic infarction of lung, etc:—								
(1) Hypostatic congestion of lung ..								
(2) Massive collapse ..								
(3) Pulmonary embolism ..								
(4) Others ..								
112. Asthma ..	2	30	32	30				2
113. Pulmonary emphysema ..		1	1	1				
114. Other diseases of the respiratory system:—								
(1) Chronic interstitial pneumonia (including occupational diseases of the lung)								
(2) Gangrene of the lung ..								
(3) Abscess of the lung ..		1	1				1	
(4) Bronchiectasis ..		1	1	1				
(5) Others ..		2	2	2				
<i>IX. Diseases of the Digestive System.</i>								
115. Diseases of the buccal cavity, pharynx, etc:—								
(1) Pyorrhoea ..		15	15	14				1
(2) Dental caries ..	1	10	11	11				
(3) Stomatitis ..								
(4) Ludwig's angina ..								
(5) Diseases of the tonsils ..		21	21	20				1
(6) Others ..		2	2	2				
116. Diseases of the oesophagus ..								
117. Ulcer of the stomach or duodenum:—								
(1) Ulcer of the stomach ..	1	28	29	26				3
(2) Ulcer of the duodenum ..								
118. Other diseases of the stomach:—								
(1) Gastritis ..		13	13	13				
(2) Others ..		1	1	1				
<i>Carried forward</i> ..	230	3789	4019	3618	24	15	166	196

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..	230	3789	4019	3618	24	15	166	196
119. Diarrhoea and enteritis (under 2 years) ..		4	4	3			1	
120. Diarrhoea and enteritis (2 years and over):—								
(1) Colitis ..		5	5	5				
(2) Otherwise defined ..		25	25	24				1
121. Appendicitis ..		3	3	2			1	
122. Hernia, Intestinal obstruction:—								
(1) Hernia ..	1	7	8	7				1
(2) Strangulated hernia ..		1	1				1	
(3) Intestinal obstruction (including intussusception) ..								
123. Other diseases of the intestines:—								
(1) Constipation, intestinal stasis		22	22	22				
(2) Diverticulitis ..								
(3) Others ..		1	1	1				
124. Cirrhosis of liver (non-syphilitic):—								
(1) Alcoholic ..		3	3	2			1	
(2) Not returned as alcoholic ..	1	16	17	11			4	2
125. Other diseases of the liver:—								
(1) Acute yellow atrophy ..								
(2) Toxic hepatitis ..								
(3) Amoebic abscess & hepatitis	3	15	18	15			2	1
(4) Others ..		3	3	2				1
126. Biliary calculi:—								
(1) With cholecystitis ..								
(2) Without mention of cholecystitis ..								
127. Other diseases of the gall bladder and ducts:—								
(1) Cholecystitis without record of calculi ..								
(2) Others ..		2	2	1				1
128. Diseases of the pancreas (excluding diabetes mellitus) ..								
129. Peritonitis, without stated cause ..		3	3				3	
X. <i>Diseases of the Genito-Urinary System (non-venereal).</i>								
130. Acute nephritis ..	1	4	5	3			2	
131. Chronic nephritis ..		9	9	6			2	1
132. Nephritis (undefined as acute or chronic) ..	1	21	22	14			7	1
133. Other diseases of the kidney and annexa:—								
(1) Pyelitis ..		1	1	1				
(2) Others ..		4	4	4				
134. Calculi of the urinary passages ..								
(1) Calculi of the kidney and ureter ..								
(2) Calculi of the bladder ..		2	2	1				1
(3) Calculi of unstated site ..								
135. Diseases of the bladder:—								
(1) Cystitis ..		8	8	7			1	
(2) Others ..		1	1	1				
136. Diseases of the urethra:—								
(1) Stricture ..		11	11	11				
<i>Carried forward</i> ..	237	3960	4197	3761	24	15	191	206

DISEASES.		Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
	<i>Brought forward</i> ..	237	3960	4197	3761	24	15	191	206
	(2) Others ..		6	6	6				
137.	Diseases of the prostate ..		1	1					1
138.	Diseases of the male genital organs:—								
	(1) Epididymitis ..		4	4	4				
	(2) Orchitis ..		5	5	5				
	(3) Hydrocele ..	1	6	7	6				1
	(4) Others ..		4	4	4				
139.	Diseases of the female genital organs:—								
	(1) Diseases of the ovary ..		1	1	1				
	(2) Diseases of the fallopian tube ..		3	3	2				1
	(3) Diseases of the parametrium ..								
	(4) Diseases of the uterus ..		4	4	4				
	(5) Diseases of the breast ..								
	(6) Other diseases of the female genital organs ..		5	5	5				
<i>XI. Conditions arising in Pregnancy, Child-birth and the Puerperal State.</i>									
140.	Post abortive sepsis:—								
	(1) Septic abortion ..								
141.	Abortion not returned as septic:—								
	(1) Haemorrhage following abortion ..								
	(2) Abortion without record of haemorrhage ..		6	6	6				
142.	Ectopic gestation ..								
143.	Other accidents of pregnancy ..		1	1	1				
144.	Puerperal haemorrhage:—								
	(1) Placenta praevia ..								
	(2) Other puerperal haemorrhage ..								
145.	Puerperal sepsis:—								
	(1) Puerperal septicaemia ..								
	(2) Puerperal sepsis, not including septicaemia ..								
146.	Puerperal albuminuria and convulsions:—								
	(1) Ante-partum eclampsia ..								
	(2) Intra-partum eclampsia ..								
	(3) Post-partum eclampsia ..		2	2				1	1
	(4) Albuminuria of pregnancy ..								
	(5) Pyelitis of pregnancy ..								
	(6) Otherwise defined ..		1	1	1				
147.	Other toxæmias of pregnancy:—								
	(1) Hyperemesis gravidarum ..		1	1				1	
	(2) Others ..		11	11	11				
148.	Puerperal phlegmasia embolism:—								
	(1) Puerperal phlegmasia ..								
	(2) Puerperal embolism ..								
149.	Conditions associated with labour:—								
	(1) Normal labour ..	12	230	242	225				17
	(2) Abnormal labour ..		22	22	21		1		
	(3) Labour complicated with intercurrent disease ..								
	<i>Carried forward</i> ..	250	4273	4523	4063	24	16	193	227

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..	250	4273	4523	4063	24	16	193	227
(4) Accidents of childbirth ..								
150. Other or unspecified conditions of the puerperal state:—								
(1) Puerperal insanity ..								
(2) Puerperal diseases of the breast ..								
(3) Others ..		1	1				1	
<i>XII. Diseases of the Skin and Cellular Tissues.</i>								
151. Carbuncle, boil ..	1	14	15	15				
152. Cellulitis, acute abscess:—								
(1) Cellulitis ..		26	26	24			1	1
(2) Acute abscess ..	4	100	104	98		1		5
(3) Otherwise defined ..		6	6	5				1
153. Other diseases of the skin and annexa:—								
(1) Ulcers ..	26	323	349	314		4		31
(2) Dermal mycoses ..								
(3) Herpes ..		9	9	9				
(4) Scabies ..	3	27	30	29				1
(5) Others ..	8	74	82	80		1		1
<i>XIII. Diseases of the Bones and Organs of Locomotion.</i>								
154. Acute infective osteomyelitis and periostitis ..	1	9	10	7				3
155. Other diseases of the bones ..								
156. Diseases of the joints and other organs of locomotion:—								
(1) Diseases of the joints ..	3	6	9	9				
(2) Diseases of the other organs of locomotion ..								
<i>XIV. Congenital Malformations.</i>								
157. Congenital malformations:—								
(1) Congenital hydrocephalus ..								
(2) Spina bifida and meningocele ..								
(3) Congenital malformation of the heart ..		1	1				1	
(4) Monstrositis ..								
(5) Congenital hypertrophic, pyloric stenosis ..								
(6) Cleft palate, harelip ..		4	4	3				1
(7) Imperforate anus ..								
(8) Other congenital malformations ..		3	3	3				
<i>XV. Diseases of early Infancy.</i>								
158. Congenital debility ..								
159. Premature birth ..		6	6	1			5	
160. Injury at birth ..								
161. Other diseases peculiar to early infancy:—								
(1) Atelectasis ..							1	
(2) Icterus neonatorum ..		1	1				1	
(3) Affections of the umbilicus ..		1	1				1	
<i>Carried forward</i> ..	296	4884	5180	4660	24	22	203	271

DISEASES.	Remained	Admitted	Total	Discharged	Transferred	Absconded	Died	Remaining
<i>Brought forward</i> ..	296	4884	5180	4660	24	22	203	271
(4) Pemphigus neonatorum ..								
(5) Others		3	3	3				
XVI. <i>Conditions Associated with Old Age.</i>								
162. (1) Senile dementia ..		1	1	1				
(2) Other forms of senile decay	3	9	12	5			4	3
XVII. <i>Affections Produced by External Causes.</i>								
163. Suicide, or attempted suicide, by poisoning (including corrosive poisoning) ..								
164. Suicide, or attempted suicide, by gas poisoning								
165. Suicide, or attempted suicide, by hanging or strangulation ..								
166. Suicide, or attempted suicide, by drowning								
167. Suicide, or attempted suicide, by firearms								
168. Suicide, or attempted suicide, by cutting or piercing instruments								
169. Suicide, or attempted suicide, by crushing								
170. Suicide, or attempted suicide, by jumping from a height ..		1	1				1	
171. Suicide, or attempted suicide, by other means								
172. Infanticide								
173. Assault or homicide, by firearms								
174. Assault or homicide, by cutting or piercing instruments ..		56	56	55			1	
175. Assault or homicide, by other means	3	197	200	195			2	3
176. Attacks by venomous animals:—								
(1) Snake bite		2	2	2				
(2) Insect bite		3	3	3				
(3) Others		1	1	1				
177. Food poisoning								
178. Accidental absorption of irrespirable or poisonous gas ..								
179. Other acute accidental poisoning ..	1	1	2	1			1	
180. Injuries due to conflagration ..								
181. Accidental burns (conflagration excepted):—								
(1) Burns by fire		9	9	7				2
(2) Scalds		11	11	10				1
(3) Burns by corrosive substances		5	5	5				
(4) Dermatitis due to exposure to sun								
(5) Dermatitis due to exposure to other forms of radiation								
182. Accidental mechanical suffocation								
183. Accidental immersion or drowning		7	7	7				
184. Accidental injury by firearms ..								
185. Accidental injury by cutting or piercing instruments ..		186	186	183				3
<i>Carried forward</i> ..	303	5376	5679	5138	24	22	212	283

DISEASES.				Remained	Admitted	Total	Discharged	Transferred	Atsconded	Died	Remaining
<i>Brought forward</i> ..				303	5376	5679	5138	24	22	212	283
186. Accidental injury by fall, crushing, etc:—											
(1) By fall				1	38	39	38				1
(2) By machinery					1	1	1				
(3) By motor vehicles				1	50	51	49				2
(4) By railway vehicles					3	3	3				
(5) By other means				10	45	55	51		3		1
187. Cataclysm (tidal waves, cyclones, etc.):—											
188. Injury by animals (except poisoning by venomous animals) ..					29	29	27			1	1
189. Hunger or thirst											
190. Excessive cold											
191. Excessive heat					2	2	2				
192. Lightning											
193. Electricity											
194. Other unstated forms of violence:—											
(1) Inattention at birth											
(2) Others					1	1	1				
195. Violence of an unstated nature (i.e. suicidal, homicidal, or accidental)											
196. Wounds of war											
197. Execution of civilians by belligerent armies											
198. Execution											
XVIII. Ill-defined Conditions.											
199. Sudden death (cause unknown) ..											
200. Cause of death unstated or ill-defined											
201. Diseases not included in this classification which have caused no deaths											
202. Malingering											
203. Cases admitted to hospital for observation as to mental condition ..					27	27	25				2
204. Cases admitted for observation (not mental)				6	82	88	84		2		2
205. Persons accompanying patients ..				2	89	91	88				3
206. General debility				1	6	7	7				
Total ..				324	5749	6073	5514	24	27	213	295
NATIONALITIES OF PATIENTS.				Remained	Admitted	Total	Discharged	Transferred	Atsconded	Died	Remaining
Europeans					35	35	35				
Eurasians					5	5	5				
Chinese				116	1,682	1,798	1,578	4	4	123	89
Indians				62	1,864	1,926	1,797	8	2	59	60
Javanese				1	15	16	15				1
Malays				144	2,026	2,170	1,971	12	21	29	137
Japanese					33	33	32			1	
Others				1	89	90	81			1	8
Total ..				324	5,749	6,073	5,514	24	27	213	295

Appendix V.

Births and Deaths Registered for the past five years.

Years.	Kota Bharu District		Ulu Kelantan District		Pasir Puteh District		Pasir Mas District		Bachok District		Total	
	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths	Births	Deaths
1935 ..	7,510	4,821	2,307	1,476	1,162	1,225	}	*	*	*	10,979	7,522
1936 ..	7,355	5,246	2,574	1,892	1,723	1,318					11,652	8,456
1937 ..	4,773	3,579	1,683	1,262	1,524	872	2,031	810	800	462	10,811	6,985
1938 ..	4,397	3,675	2,297	1,131	1,757	692	3,167	883	1,467	497	13,085	6,878
1939 ..	4,584	3,499	1,731	1,315	1,573	825	3,045	1,083	1,166	657	12,099	7,380

*Previously included under Kota Bharu and Pasir Puteh Districts.

Appendix VI.

Births and Deaths registered in 1939 according to Nationalities.

NATIONALITIES.			Populations	Births	Birth rate per mille	Deaths	Death rate per mille
Malays	..	..	344,215	10,926	31.74	6,762	19.64
Chinese	..	.	29,645	849	28.64	397	13.39
Indians	..	..	11,362	182	16.01	124	10.91
Europeans	..	..	100	3	30.	—	—
Eurasians	..	..	87	2	11.49	—	—
Others	..	..	8,574	137	15.98	97	11.31
Total ..			393,983	12,099	30.71	7,380	18.73

Appendix VII.

Infantile Mortality.

Total Births.	Death under one year of age.	Mortality per 1,000 Births.
12,099	1,344	111.08

Appendix VIII.
STATE OF KELANTAN.

Deaths grouped according to Age, Sex and Nationality.

Deaths by Age Groups	Sex	Europeans	Eurasians	Malays	Chinese	Indians	Others	Total
O—	M	—	—	262	18	6	3	289
	F	—	—	211	11	9	1	232
4 Weeks	M	—	—	159	15	1	1	176
	F	—	—	124	15	5	—	144
3 Months	M	—	—	107	5	2	—	114
	F	—	—	81	7	2	1	91
6 Months	M	—	—	153	3	3	—	159
	F	—	—	129	9	—	1	139
1 Year	M	—	—	342	16	4	3	365
	F	—	—	376	15	5	3	399
5 Years	M	—	—	172	10	1	2	185
	F	—	—	176	8	3	2	189
10 Years	M	—	—	121	4	2	4	131
	F	—	—	85	10	1	4	100
15 Years	M	—	—	102	3	—	1	106
	F	—	—	84	7	1	—	92
20 Years	M	—	—	83	6	2	1	92
	F	—	—	123	4	4	1	132
25 Years	M	—	—	139	7	5	3	154
	F	—	—	155	8	7	2	172
30 Years	M	—	—	165	22	10	3	200
	F	—	—	182	9	4	1	196
35 Years	M	—	—	238	13	16	1	268
	F	—	—	186	10	—	3	199
40 Years	M	—	—	244	29	12	2	287
	F	—	—	186	8	—	1	195
45 Years	M	—	—	112	31	4	3	150
	F	—	—	97	5	—	2	104
50 Years	M	—	—	195	20	7	4	226
	F	—	—	174	2	—	3	179
55 Years & over	M	—	—	896	46	7	20	969
	F	—	—	903	21	1	21	946
Deaths	M	—	—	3,490	248	82	51	3,871
	F	—	—	3,272	149	42	46	3,509
Total Deaths	M.F.	—	—	6,762	397	124	97	7,380
Births	M	—	—	5,656	437	93	81	6,267
	F	3	2	5,270	412	89	56	5,832
Total Births	M.F.	3	2	10,926	849	182	137	12,099

Appendix IX.

DEATHS FROM PRINCIPAL CAUSES.

DISEASES.	Males.	Females.	Total.
Malaria	40	21	61
Fever Unspecified (probably malaria) ..	129	129	258
Fever Unspecified	1,663	1,608	3,271
Enteric Fever	2	—	2
Dysentery	5	2	7
Influenza	1	2	3
Tuberculosis of the Respiratory System (in- cluding cases reported as "Batok Kering")	65	20	85
Other forms of Tuberculosis	—	—	—
Leprosy	—	1	1
Syphilis	6	—	6
Ankylostomiasis	21	8	29
Cancer	2	—	2
Beri-Beri	9	3	12
Diseases of the Heart	4	2	6
Other Diseases of the Circulatory System ..	3	1	4
Bronchitis (including cases reported as "Batok Sahaja")	45	46	91
Pneumonia (all forms)	17	6	23
Other Diseases of the Respiratory System ..	7	4	11
Diarrhoea & Enteritis (including "Cherah") ..	62	43	105
Other Diseases of the Digestive System (in- cluding cases reported as "Sakit Perot") ..	70	40	110
Convulsions (including "Sawan") ..	390	332	722
*Diseases of the nervous System & Sense Organs	9	1	10
Non-Venereal Diseases of Genito-Urinary System	5	—	5
Diseases of Pregnancy, Child Birth and Puerperal State	—	112	112
*Premature Birth & Diseases of Early Infancy	28	24	52
Old Age and Senility	970	946	1,916
Violence (all forms)	49	14	63
Other Causes	269	144	413
Total ..	3,871	3,509	7,380

*Excluding Infantile convulsions. Ratio per mille of population 18.73.

Appendix X.

Population by races for 1939 (Census + Births — Deaths + Migrational surplus.)

Year.	Malays.	Europeans.	Eurasians.	Chinese.	Indians.	Others.	Total.
1939.	344,215	100	87	29,645	11,362	8,574	393,983

(37)

Under Malays are included all persons of the Malayan race classed in 1931 Census as Malasians.

The total number of births registered in 1939 was 12,099 (6,267 males and 5,832 females). In every 1,000 births registered 517.98 were males and 482.02 females. The highest birth rate according to nationalities was 31.74 per mille, amongst Malays. The lowest (amongst Eurasians) was 11.49 per mille.

The total number of deaths was 7,380 (3,871 males and 3,509 females).

Births Rate 30.71 per mille as compared with 32.76 in 1938.

Death Rate 18.74 per mille as compared with 17.22 in 1938.

Infantile Mortality 111.08 per 1,000 births as compared with 111.34 in 1938.

Appendix XI. ESTATE HEALTH STATISTICS.

Estate Hospitals.	Total Estate Population all Nationalities.												Indian Population.						
	Total Labour Force with Dependents.	Total Admissions			Malaria (Hospital Admissions)		Ankylos		Diarrhoea & Dysentery		Lung Diseases		V. D.	Ulcers	Indians with Dependents.	Deaths	Death rate per 1,000	Births	Death under one year.
		Cases	Deaths	Death rate per 1,000	Cases	Deaths	Cases	Deaths	Cases	Deaths	Cases	Deaths							
Kerilla	1259	370	19	—	166	4	23	—	192	6	262	4	11	144	888	18	—	38	7
Lower Sokor	323	105	4	—	47	1	5	—	27	—	100	—	1	43	311	4	—	6	2
Kenneth	278	88	3	—	42	1	1	—	33	—	22	—	1	77	255	3	—	10	2
Keln. Rubber Ests. Ltd. (Chaning & L. Kabu)	702	105	10	—	27	4	11	—	3	1	109	1	4	92	5	—	—	—	—
Kuala Nal	339	27	2	—	2	—	50	—	45	1	122	1	4	38	151	1	—	1	—
Kuala Pertang	561	317	5	—	114	—	109	—	40	—	117	1	4	64	289	2	—	6	—
Pasir Gajah	217	95	2	—	41	—	—	—	14	1	68	—	1	37	142	2	—	4	1
Taku	270	141	4	—	69	1	1	—	24	—	59	—	5	5	209	4	—	18	3
Kuala Pahi	353	279	8	—	102	—	58	—	17	1	289	1	4	56	264	8	—	5	2
Kuala Gris	516	171	6	—	—	—	513	—	40	—	261	—	8	102	220	5	—	4	2
Kuala Geh & Stapoh Nal	778	703	10	—	340	3	216	—	65	—	113	4	2	86	372	9	—	10	—
Kuala Hau	209	29	1	—	9	—	11	—	12	—	5	1	4	26	113	1	—	1	—
Pasir Jinggi	98	22	—	—	6	—	3	—	9	—	8	—	—	1	72	—	—	1	—
Kuala Pergau	279	19	2	—	5	—	6	—	35	—	162	1	16	100	2	—	—	—	—
Southern Mining Co., Temangan	701	977	9	—	804	5	24	—	19	1	71	—	4	35	{ 91s 173n	2	—	—	—
Total	6,883	3,448	85	12.35	1,774	19	1,031	—	575	11	1,768	14	69	906	3,557	59	16.59	104	19

Deaths include all who died in Government Hospitals within thirty days of admission.
Estate employing entirely Malay or Chinese labour are not shown as no reliable statistics are available.
* S = Southern Indians. N = Northern Indians.

Appendix XII.

CLIMATOLOGICAL SUMMARY, KOTA BHARU, KELANTAN, 1939.

AIR TEMPERATURE.

RAINFALL.

	Mean		Mean	Mean	Highest		Lowest		Total		Greatest in 24 hours.	
	Maximum	Minimum	½ (Max. + Min.)		Maximum	Date	Minimum	Date	Inches	Amount	Date	
1939.	°F	°F	°F	°F	°F		°F		In.	In.		
January	82.3	71.5	76.9	76.9	86	9	67	30	40.14	9.66	11	
February	85.4	70.3	77.9	77.9	87	21,28	66	25	0.53	0.24	18	
March	89.2	71.0	80.1	80.1	92	28,29	66	8	0.72	0.22	19	
April	88.5	73.2	80.9	80.9	93	4,22	67	1,2	16.15	7.14	8	
May	89.7	74.0	81.9	81.9	92	24	71	25	9.43	2.22	24	
June	89.4	73.9	81.7	81.7	92	9,12	71	5	10.40	1.92	28	
July	89.8	72.9	81.3	81.3	93	23	69	11	2.86	1.18	3	
August	90.2	72.8	81.5	81.5	94	25,30	70	Sev.	5.40	1.81	16	
September	89.5	72.9	81.2	81.2	94	2	70	2,21	7.43	2.30	20	
October	87.6	73.0	80.3	80.3	90	Sev.	71	5	5.27	0.87	5	
November	85.9	73.5	79.7	79.7	92	7	71	26	16.73	3.03	27	
December	81.9	71.8	76.9	76.9	86	2,5	69	Sev.	21.38	3.54	2	
	—	—	—	—	—	—	—	—	136.44	—	—	
YEAR	87.5	72.6	80.0	80.0	94	—	66	—	—	9.66	—	
{ Totals Means or Extremes												

{ Totals
Means or
Extremes

Appendix XIII.

ANNUAL REPORT BY THE VETERINARY INSPECTOR,
FOR THE YEAR 1939.

1. *Staff and Administration.* The Veterinary Inspector, stationed at Kota Bharu, is in charge of the veterinary work in the State under the guidance and supervision of Chief Medical Officer, Kelantan.

2. *Census of Livestock* taken during the year:—

Cattle	..	..	..	..	104,404
Buffaloes	..	..	..	..	39,966
Sheep	..	..	..	..	13,939
Goats	..	..	..	..	24,304
Swine	..	..	..	..	5,234

Figures for K. Bharu only.

3. *Principal Diseases among Animals.*

(a) There is no Animal Infirmary.

(b) During the year the following animals were treated as out-patients either at the General Hospital or owners' premises:—

Cattle	14
Buffaloes	2
Dogs	28
Fowls	10
Cats	3
Ponies	9
Monkeys	2

Total	..	68
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(c) In addition, kampongs (villages) were visited and advice in regard to breeding and care of animals, castration of poorer type of bulls, cruelty to animals, etc., etc., given when necessary.

(d) Rabies.

(i) No cases occurred.

(ii) One thousand four hundred and seventy three (1,473) dogs were registered (for licences) in the State.

(iii) One thousand five hundred and fifty two (1,552) dogs were destroyed.

(iv) In all 136 prosecutions against the owners of unlicensed dogs were recorded during the year.

- (v) Eight (8) dogs which bit people were kept under observation each for 10 days at the premises of owners and were after that period discharged as they showed no signs of rabies.
- (e) Cattle Sickness. Apart from a minor attack of "pink eye" among cattle at Kampongs Senang and Surau Batu near Gunong in the District of Bachok, which occurred in June, affecting in all 25 head of cattle, no other disease of a serious nature occurred during the year.

Death among animals (from principal causes).

CAUSES.	CATTLE.	DOG.	HORSES.	OTHER ANIMALS.	REMARKS.
Arsenical poisoning	24	—	—	—	—

Occurred in Kampongs Kuala Pergau and Kuala Balah in Ulu Kelantan District in July as a result of grazing on fields where "weed killer" containing Sodium arsenite was sprinkled or sprayed on. Both land and cattle-owners were duly warned, and no cases occurred since then.

- (f) Diseases of Poultry. Except for minor ailments, no sickness of a serious nature occurred during the year, but I would like to give hereunder an extract of State Agricultural Officer's report in this connection:—

"Export declined yet again totalling 1,405 head only as compared with 14,060 head in 1938. The trade has collapsed badly during the past few years. As recently as 1935 as many as 120,000 head were reported. It is difficult to ascribe a reason for the decline. It may have been due to outbreak of disease, but these are seldom reported so that evidence is lacking."

4. The following Notifications were passed during the year:—

- (i) Circular No. 3 of 1938 dated 17th January, 1938 regarding inoculation of dogs due to the outbreak of rabies, was cancelled by Notice dated 5th February, 1939 as no fresh case of rabies occurred.
- (ii) Circulars Nos. 8 and 11 of 1939 dated 16th May 1939 regarding the existence of sickness such as Rinderpest and Barbone among cattle, buffaloes, sheep, goats, horses and swine in Thailand.

- (iii) Enactment No. 5 of 1939 dated 3rd January, 1939 regarding Quarantine and Prevention of Diseases—An Enactment to provide for the prevention of the introduction into and spread in Kelantan of infectious disease.
- (iv) Quarantine and Prevention of Diseases Regulations dated 21st February, 1939—In accordance with Sections 3, 4 & 9 of the above Quarantine and Prevention of Diseases Enactment.
- (v) Circular No. 28/39 dated 6.11.39 rescinding Circular No. 15 of 1938 prohibiting the importation of Swine from Johore into Kelantan.

5. *Importation and Exportation of Animals:—*

	ANIMALS.	IMPORTATION.	EXPORTATION.	CONVEYED THRO.
Oxen	..	—	104	8
Buffaloes	..	—	338	—
Dogs	..	8	—	—
Ponies	..	15	—	—
Ram	..	—	1	—
Goats	..	—	2	—
Monkey	..	—	1	—
Swine	..	22	131	—
		—	—	—
Total	..	45	577	8
		—	—	—

All were examined and certificates of health were given.

6. *Castration.*

One hundred and fifty eight (158) bulls were castrated by the Burdizzo method.

7. *Inspection of Milch-Cattle Sheds, Slaughter-Houses & Markets.*

These places were often visited and advice given when necessary.

Animals slaughtered during the year as supplied by District Officers concerned are as follows:—

DISTRICT.	CATTLE.	BUFFALOES.	SHEEP.	GOATS.	SWINE.
Kota Bharu	5,138	1,024	362	405	2,109
Pasir Mas	2,547	710	—	—	183
Pasir Puteh	1,053	319	—	—	38
Ulu Kelantan	953	313	30	107	1,271
Bachok	814	226	283	469	11
	—	—	—	—	—
Total	10,505	2,592	675	981	3,612
	—	—	—	—	—

8. *Cruelty to Animals.*

Six (6) oxen, 5 buffaloes and 1 monkey, were examined at the request of the Police, and the owners were legally dealt with.

9. *Livestock Show.*

There was a Livestock Show of cattle, sheep and goats at Kota Bharu on July 15th.

10. *Polo Club.*

The Kelantan Polo Club was formed in Kota Bharu in August, and 15 ponies were imported by the end of the year.

D. R. MEHTA, G.B.V.C.

Veterinary Inspector, Kelantan.

KELANTAN

1939

Scale 12 Miles to an Inch

Miles 12 9 6 3 0 12 Miles

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REFERENCE

Roads Metalled	
" not Metalled	
" Proposed	
Railways Open	
Trigonometrical Station	
State Boundary	
District Boundary	
Alienated Land	
Forest Reserve	

THAILAND

Hospital
Headquarters
Stopping Places by M. Boat
" " " M. Car
" " " Pack

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PERAK

TRENGGANU

ULU KELANTAN

PAHANG

